DOCUMENT RESUME

ED 084 021 PS 006 842

AUTHOR	Semb, Susan; And Others
TITLE	The Teacher as a Classroom Observer: A Simple and Reliable Procedure for Recording Teacher Interactions.
PUB DATE	73
NOTE	11p.
AVAILABLE FROM	Susan Semb, Pinckney School, Lawrence Unified School District #497, Lawrence, KS 66044
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Classroom Observation Techniques; *Educational Environment; *Elementary School Students; Grade 6; Lesson Observation Criteria; Reliability; *Student Teacher Relationship; *Teacher Behavior

ABSTRACT

This report describes a study of a procedure for recording teacher interactions in a sixth grade classroom. The study was designed to record interactions for an entire class and to determine if a sixth grade student could act as a reliable observer in such a data collecting system. Results indicate that sixth grade students can observe and record teacher behavior reliably, thus eliminating the need for an outside observer and freeing the teacher for other activities. The merits of use of a digital clock in maintaining accurate time counts and high reliability are discussed. (DP)

FILMED FROM BEST AVAILABLE COPY

ED 084021

THE TEACHER AS A CLASSROOM OBSERVER: A SIMPLE AND RELIABLE PROCEDURE FOR RECORDING TEACHER INTERACTIONS[1]

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Susan Semb and Jill Noyce

Lawrence Unified School District #497, Lawrence, Kansas

George Semb and Eugene Ramp

Department of Human Development, University of Kansas

Abstract

The present paper describes a simple procedure for recording teacher interactions in a sixth-grade classroom. The data indicate that sixth grade students can record teacher interactions and serve as reliability observers just as well as the teacher and an outside observer, thus relieving the teacher from recording data while he or she is acting as an instructor. Finally, the merits of a digital clock are explored and discussed.

PS 006842

Several investigators (Broden, Bruce, Mitchell, Carter and Hall, 1970; Hall, Panyan, Rabon and Broden, 1968; Hall, Lund and Jackson, 1968; McAllister, Stachowiak, Baer and Conderman, 1969; Sanders and Hanson, 1971; Thomas, Becker and Armstrong, 1968) have measured teacher interactions in the classroom. Most, however, have relied on outside observers to record frequency and type of teacher-student interactions. Hall, Christler, Cranston and Tucker (1970) and Hall, Fox, Willard, Goldsmith, Emerson, Owen, Davis and Porcia (1971) used a teacher as the observer and experimenter in several studies which involved counting inappropriate behaviors of a particular child. The procedure was limited to a small number of students and to counting only inappropriate behavior. Kubany and Sloggertt (1973) developed a procedure for the teacher to estimate the percent of time a student engaged in appropriate and inappropriate behavior by using a variable interval schedule of observation. This method is a useful tool for measuring the overall on-task behavior of a small number students, but would be difficult to implement in a large class. In both the Hall et. al. (1970) and the Kubany and Sloggertt (1973) studies, reliability was taken by outside observers which required the presence of an extra person in the classroom.

The present experiment was designed to study a method of recording teacher interactions in which interactions were recorded for an entire class. It was also designed to determine if a student in the class could act as a reliability observer, thus eliminating the need for outside observers. A corollary advantage would also be realized if each student could be trained to record the time of his individual interactions with the teacher, thus relieving the teacher from the burden of recording interactions with each child while acting as an instructor.

METHOD

Subjects, Setting

The research was conducted in a regular sixth grade classroom. There were 23 students, one teacher and one student teacher. The students represented a wide variety of backgrounds, both ethnic and socioeconomic.

The classroom was 25' by 30' and contained 23 desks arranged in three rows facing a chalkboard and the teacher's desk in front of the room. A wall clock with a sweep second hand was hung on the front wall beside the teacher's desk and was visible to all students.

Procedure

Teacher interactions were recorded during Math, Social Studies and Independent times. Math was held during a one hour period in the morning. Students worked independently on individual assignments while the teacher sat at her desk and reinforced on-task behavior and helped any children who requested her aid. Social Studies was conducted for 45 minute periods and featured primarily class discussions directed by the teacher. Independent time (1½ hour period) included a combination of reading, language arts and spelling. Students worked on individual assignments and the teacher walked around the room reinforcing correct responses and answering questions. Observation periods occurred during 30-minute blocks of time in each of the three subject areas.

Interactions were defined as any verbal comment, physical contact such as patting a child's shoulder or nodding yes or no in answer to a question. The time of each interaction with each child was recorded by both the teacher and the reliability observer, or the students and the reliability

observer, to the nearest 5 seconds (e.g. 10:10:20, 1:20:35). If the teacher was interupted during an interaction with one student, both the initial interaction and the start of the second interaction were recorded, as well as the time of the interupter's interaction.

Dependent Variable

The dependent variable in this experiment was the reliability between the two recorders. Two reliabilities were calculated. First, the teacher counted the number of interactions recorded for each child (either on her sheet during the initial conditions or on the students' pads during later conditions), and those recorded for each child by the reliability observer. If both observers recorded the same number of interactions, there were no disagreements. If one observer scored three interactions and the other four, it was defined as one disagreement. If one recorded five and the other recorded three, it was defined as two disagreements. And, so forth. This will be referred to as Occurrence Reliability. Reliability co-efficients were calculated by dividing the total number of agreements for all children by the number of agreements plus disagreements.

The second reliability measure, Time plus Occurrence Reliability, took into consideration the time at which each interaction was recorded. At the end of the day, the teacher compared her times (or the children's times) with the reliability observer's times for each child. An agreement was defined as two times which differed by no more than 16 seconds. If the difference was more than 16 seconds, the teacher checked to see if either she or the reliability observer had missed an interaction. If the next time corresponded to the one she was checking, it was counted as an omission (one disagreement). If however, the next two times corresponded, the previous teacher (or child) time and reliability observer time were both

counted as disagreements. A sample data entry for one child is shown in Table 1. Reliability was computed by dividing the number of agreements

---

Insert Table 1 about here

---

by the number of agreements plus disagreements.

Experimental Conditions

Teacher and Outside Observer - Wall Clock[2]: During Sessions 1-9 the teacher carried a large clip board which listed the students' names in alphabetical order. Each time she interacted with a child she recorded the time of the interaction beside the child's name. The reliability observer (student teacher) sat in the front of the room and recorded interaction times independently on her sheet of paper.

Teacher and Observer and Calling Out Time - Wall Clock: The teacher and observer were frustrated because Time and Occurrence reliability was so low. During Session 11 they decided it would be a good idea to "call out" times occasionally to make sure that they were reading the clock correctly. Although this method was more reinforcing to the teachers, it did not have the same effect on their advisor. He tactfully pointed out that this was not a legitimate way to record reliability, since it was not independent.

Teacher and Observer - Wall Clock[2]: Sessions 13-17 provided a natural return to baseline during which the teacher and the observer recorded times of each interaction independent of each other.

Students and Observer - Wall Clock: During Sessions 18-22 each student in the room was given a small pad of paper and was instructed to keep that

TABLE 1

Teacher Interactions
Sample for One Child
Data

Teacher Time	Observer Time	Outcome
10:01:20	10:01:15	Agreement
04:10	04:10	Agreement
05:00		Disagreement*
	06:00	Disagreement*
07:25	07:15	Agreement
08:50	09:00	Agreement
10:30	10:30	Agreement
11:45	11:50	Agreement
12:30		Disagreement-omission
14:20	14:15	Agreement
16:00	15:55	Agreement

*Discrepency between the two times was greater than 16 seconds.

Occurrences: Teacher - 10
Observer - 9

Time plus Occurrence:
Agreements - 8
Disagreements - 3

Time plus Occurrence Reliability:
A/A + D x 100 = 73%

PS 006842

pad with him at all times during the observation period. The students were also instructed to record from the wall clock on their pad each time, to the nearest 5 seconds, that the teacher interacted with them. Two fifteen minute instruction periods were conducted in which the students were asked to practice recording times to insure that they would be able to do so efficiently during the observation periods. Thus, the students now kept an individual record of their own contacts with the teacher. At the end of the period the pads were collected and the times recorded on a summary sheet identical to that of the observer's.

Students and Student Observer - Wall Clock[1]: The experimenters then asked: if students can be trained to record individual teacher interactions, perhaps they could also act as reliability observers. So, during Sessions 19-24, the teacher selected a different child each session to serve as the reliability observer. As in the other conditions, the student sat at the front of the room and recorded the time of the interactions.

Students and Student Observer - Digital Clock: The previous conditions suggested that the low reliability between observers on clock reading was not a function of the teacher's inability to tell time. The children suggested that it might be a function of the clock itself. At this point (Session 25) a large digital clock manufactured by Copal was donated with a bit of persuasion and placed directly under the wall clock at the front of the room. The two clocks were synchronized such that the wall clock was used for reference to seconds, and the digital clock was used for minutes, since the most consistant error noted previously had been in recording the minutes, (e.g. 10:10:45 was recorded as 10:09:45 or 10:11:45).

Students and Student Observer - Wall Clock[2]: The digital clock was removed (Sessions 33-36) to determine if the digital clock had been responsible for the change in reliability observered.

RESULTS

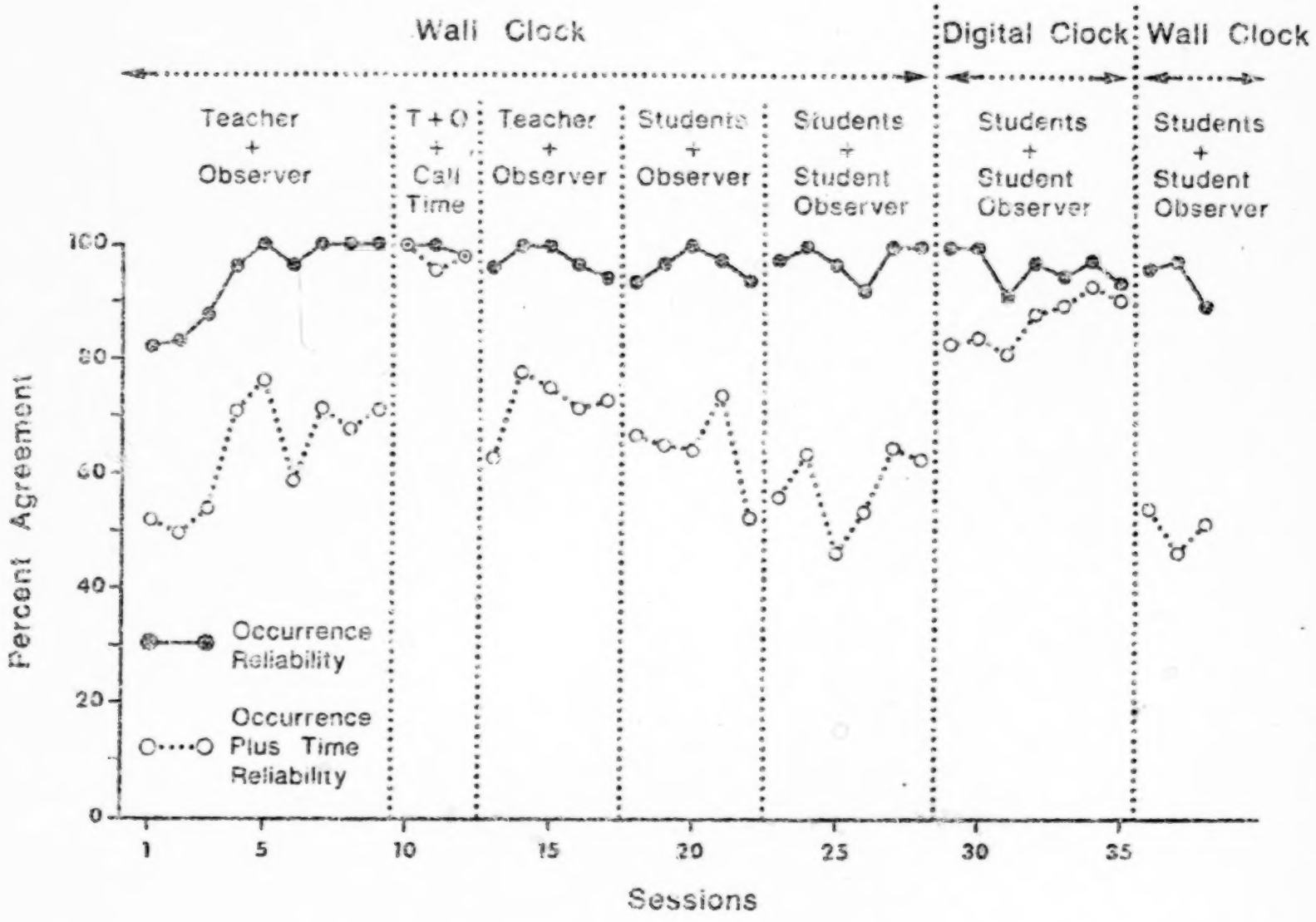
Occurence and Time plus Occurrence reliabilities are plotted for each session in Fig. 1. During the initial Teacher and Observer[1]

Insert Fig. 1 about here

---

condition (Sessions 1-9), occurrence reliability averaged 94.4% and occurrence plus time reliability had a mean value of 63.5%. During the "Call Out" condition (Sessions 10-12), occurrence reliability remained high (mean = 99.3%) and occurrence plus time climbed to a mean of 97.9%. In the return to baseline condition (Teacher and Observer[2], Sessions 13-17), occurrence reliability remained high (57.6%), but occurrence plus time reliability dropped to near its previous level (72.2%).

With the introduction of student recording (Student and Observer, Sessions 18-22), both reliabilities remained stable with means of 96.3% and 64.5%, respectively. When students acted as both recorders and reliability observers (Students and Student Observer, Sessions 23-28), occurrence reliability had a mean of 97.7% and occurrence plus time dropped slightly to 57.7%. When the digital clock was introduced (Sessions 29-35), mean occurrence reliability was 96.3% while occurrence plus time reliability increased consistently (mean = 86.7%). When the digital clock was removed (Sessions 36-38), occurrence reliability remained relatively constant (94.3%), but occurrence plus time dropped to a new low of 50.4%.


Wall Clock
Digital Clock
Wall Clock
Teacher + Observer
T + O + Call Time
Teacher + Observer
Students + Observer
Students + Student Observer
Students + Student Observer
Students + Student Observer
Percent Agreement
100
80
60
40
20
0
Occurrence Reliability
Occurrence Plus Time Reliability
1
5
10
15
20
25
30
35
Sessions

DISCUSSION

The present study demonstrates that a classroom teacher can record teacher-student interactions without major interuptions in the classroom routine. The study also demonstrates that students cannot only record their own interactions but also act as reliability observers, thus relieving the teacher from recording data while he or she is acting as an instructor. Although initially the teacher had to remind students to record their interactions with the teacher during the Students and Observer condition, after two sessions the students' recording became routine and no longer caused any interuptions in on going lessons or discussions. Further research needs to be conducted to determine whether a similar procedure could be used to record the type of interaction - positive, negative or instructional. Finally, the large part the digital clock played in maintaining high rates of time plus occurrence reliability should be noted.

REFERENCES

Broden, M., Bruce, C., Mitchell, M., Carter, V. and Hall, R. V., Effects of teacher attention on attending behavior of two boys at adjacent desks. Journal of Applied Behavior Analysis, 1970, 3, 199-203.

Hall, R. V., Christler, C., Cranston, S. S. and Tucker, B., Teachers and parents as researchers using multiple baseline designs. Journal of Applied Behavior Analysis, 1970, 3, 247-255.

Hall, R. V., Fox, R., Willard, D., Goldsmith, L., Emerson, M., Owen, M., Davis, F. and Porcia, E., The teacher as observer and experimenter in the modification of disputing and talking-out behaviors. Journal of Applied Behavior Analysis, 1971, 4, 141-149.

Hall, R. V., Panyan, M., Rabon, D. and Broden, M., Instructing beginning teachers in reinforcement procedures which improve classroom control. Journal of Applied Behavior Analysis, 1968, 1, 315-322.

Hall, R. V., Lund, D. and Jackson, D., Effects of teacher attention on study behavior. Journal of Applied Behavior Analysis, 1968, 1, 1-12.

Kubany, E. S. and Sloggett, B. B., Coding procedure for teachers. Journal of Applied Behavior Analysis, 1973, 2, 339-343.

McAllister, L. W., Stachowiak, F. C., Baer, D. M. and Conderman, L., The application of operant conditioning techniques in a secondary school classroom. Journal of Applied Behavior Analysis, 1969, 2, 277-285.

Sanders, R. M. and Hanson, F. J., A note on a simple procedure for redistributing a teacher's student contacts. Journal of Applied Behavior Analysis, 1971, 4, 157-161.

FOOTNOTES

[1]Reprints may be obtained from Susan Semb, Pinckney School, Lawrence Unified School District #497, Lawrence, Kansas, 66044.

FIGURE CAPTIONS

Fig. 1 - Occurrence (filled circles) and time plus occurrence (open circles) reliabilities plotted as a function of sessions. Experimental conditions are described at the top of the figure.